

Public Health and Medical Aspects of the Roseburg, Oreg., Disaster

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A DISASTROUS explosion shook downtown Roseburg, Oreg., early on August 7, 1959. A truckload of high explosives, parked adjacent to a building supply firm, was detonated by a fire in the company building. It was a disaster which could occur in any community but which most people tend to think only happens somewhere else. Because it was completely unexpected and so sudden in onset, the responses to the effects of the explosion were those which would normally operate to meet any emergency.

This report deals with the consequences of the event to public health and the medical emergency. Since many of these problems are common to those which may be expected in a civil or wartime disaster in any town, a recounting of the experiences immediately following the explosion may be valuable for civil defense and public health disaster planning in other communities.

Roseburg, a town of 13,000, is the county seat of Douglas County, located in the southwestern part of Oregon. The economy of the area is primarily dependent on the lumber industry, with agriculture and related enterprises providing the balance. Extensive forests within the county provide an abundant supply of raw material for the industry.

The Douglas County Health Department, which coordinated the public health activities subsequent to the explosion, is located in the courthouse building at Roseburg. It is staffed

by a full-time health officer, two full-time sanitarians, five full-time public health nurses, and a clerical and secretarial staff of three. There had been no formal review or planning for disaster preparedness within the health department staff since the health officer had assumed his duties in the department about 5 weeks previously.

At 8:30 p.m. on August 6, a truck loaded with 2½ tons of 40 percent dynamite and 4 tons of nitrocarbonitrate entered the city. The driver allegedly had received permission to park the truck on a parking strip adjacent to a building supply business three blocks from city center.

At 1:00 a.m., a young man and his wife passed by and noticed a fire within the building supply firm. The man stayed to observe the fire while his wife summoned the fire department. The contents of the explosive-laden truck were not realized by those present until 1 minute before the explosion at 1:15 a.m. About 20 people, mostly police, firemen, and nearby residents, were within a block of the fire prior to the explosion.

It has been estimated that the explosion was equivalent to 26 kilotons of TNT bombs. A crater 50 feet wide and 12 to 14 feet deep remained.

The immediate blast area and the fire-damaged area included about eight square blocks. Structural damage to buildings extended over a 25-block area (1,800 feet from ground zero). Lesser damage, such as broken windows, occurred over a much larger area, 50 to 75 square blocks (see chart).

Estimates of property damage amounted to more than \$12 million excluding losses in wages, business income, reparative services, medical fees, and such items. Thirteen deaths occurred

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and 57 persons received treatment for injuries. It is believed that deaths and injuries would have been much greater had the explosion occurred 3 to 5 minutes later. Volunteer fire fighters, auxiliary police, and curious individuals already alerted would have arrived on the scene in that interval.

Fire fighters and other officials believe that a second and possibly more violent explosion was averted when 150,000 gallons of liquid propane gas stored 400 feet from ground zero was saved. Not one of the four large tanks was damaged. Streams of water were played constantly on the tanks during the fire to keep them cool.

The Roseburg National Guard unit was ordered by its commanding officer to assemble immediately after the explosion, and the entire downtown area was evacuated and barricaded. A pass system was in operation by 6:00 a.m., August 7, and unauthorized persons were prevented from entering the area. Two other National Guard units ultimately arrived to assist in maintaining maximum security.

The director of the Oregon State Civil Defense Agency was notified of the disaster about 2:00 a.m., and he in turn alerted the State health officer and other State officials in accordance with the Oregon State civil defense plan. The State health officer was unable to reach the Douglas County health officer, so he telephoned the Lane County health officer at Eugene, 75 miles north of Roseburg. The Lane County health officer was requested to proceed to Roseburg to give all possible aid and offer the assistance of the staff of the Oregon State Board of Health.

The Lane County health officer upon departing alerted the Sacred Heart Hospital in Eugene to stand by to receive emergency patients from Roseburg. He and one Lane County sanitarian arrived in Roseburg at 6:15 a.m. They immediately contacted Douglas Community and Mercy Hospitals in Roseburg and learned that the Sacred Heart Hospital would not be needed. Subsequently this information was relayed to Eugene via State police radio.

Health Aspects

Generally, health hazards resulting from this disaster were related to contamination, adulteration, and glass impregnation of foods, drugs,

furniture, and bedding; identification and disposition of the dead; provision of first aid and emergency treatment of the injured; supplying food and shelter to the dispossessed; and the mobilization of medical, nursing, sanitation, and building inspection personnel.

Nearly every window in Roseburg's business district was broken. Glass fragments, driven with tremendous force, penetrated food, drugs, furniture, and all types of soft and perishable goods. In the heavily damaged areas, electricity was not restored for about 7 days and gas service 10 to 12 days later. Service was reestablished earlier in areas of less damage. It was necessary to make thorough inspections before these services could be restored with complete safety.

Water Supply and Sewerage

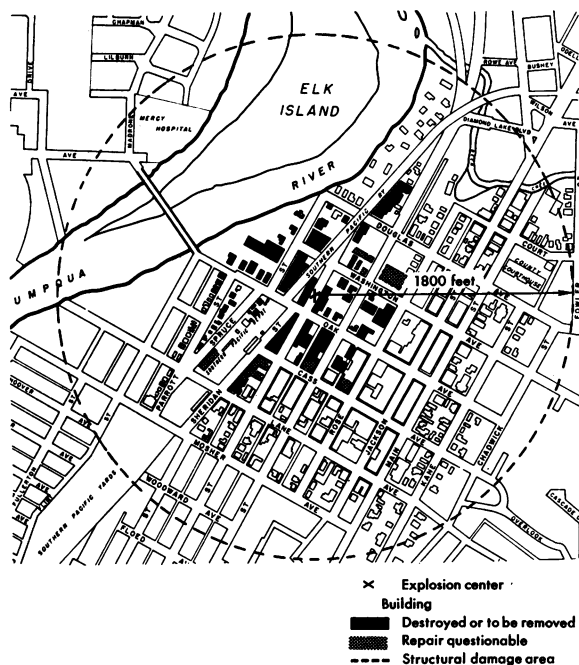
At 1:20 a.m., just after the explosion, a health department sanitarian, working as a volunteer fireman, called the water filter plant and requested that extra pumps be turned on to maintain the pressure in Roseburg mains. The other sanitarian phoned at 1:30 a.m. to inquire about the adequacy of water pressure and to request that the chlorine dosage be increased at the filter plant.

A survey of water and sewerage facilities made the morning of the disaster by the Douglas County Health Department showed neither had sustained damage. Water pressure in the mains did not drop below 80 pounds per square inch. There were no apparent breaks in the sewerage system. A news release affirming the safety of the water was provided to local television, radio, and newspapers by the county health department.

Food and Drugs

Responsibility for enforcement of laws and regulations pertaining to the processing, storing, and selling of foods and drugs in Oregon is vested in many agencies. The county health department is responsible for enforcing those laws pertaining to restaurants; the State department of agriculture has authority over milk producers and processors, grocery stores, and bakeries; the State liquor control commission has responsibility in establishments serving alcoholic beverages; and the Oregon Board of

Extent of damage in Roseburg



Pharmacy supervises some laws relating to the sale of drugs. After the explosion the Food and Drug Administration worked through local and State agencies in assuring that commodities within their jurisdiction were within safe limits before allowing them to reach consumers.

At 7:45 a.m. on August 7, the Douglas County Health Department staff and the Lane County health officer and sanitarian held a briefing to make plans for the day. It was decided first to survey restaurants and grocery stores in the affected area. No attempt was made in this survey to complete detailed inspections, the main purpose being to warn operators of these establishments to exercise caution to assure that spoiled, contaminated, or adulterated foods were not served or offered for sale.

Operators also were informed of their liability and the possibility of litigation if damaged or contaminated food was used or sold. Excellent cooperation was received in withholding these foods from consumers. The county health department issued a news release stating that establishments having foods or medicines to be destroyed should contact the department staff so that they might supervise disposition of these items to minimize scavenging. Another release

warned all citizens to observe caution in the use of food damaged in the home. Citizens were urged to discard any foods that could possibly contain shattered glass, perishables kept at room temperatures for more than 4 to 6 hours, and cans with dents or bulges.

Sanitarians continued inspection of restaurants and grocery stores on August 8 and 9. Bakeries, candy counters, and food storage plants were added to the inspection list to assure that no injurious foodstuffs were being offered for sale.

Many establishments with inoperative refrigeration were advised to move perishable foods to unaffected cold storage immediately. Frozen foods that had thawed were destroyed under supervision of the health department. Establishments that sustained damage precluding their operating in a sanitary manner were ordered to close until necessary corrections could be made and approved.

In order to protect and maintain the public health and safety the county health officer applied a liberal interpretation to public health laws and their enforcement. He received excellent cooperation, and his authority and actions were not challenged.

On August 10 it was determined that local health department personnel could not complete all the necessary and detailed inspections within a reasonable period. A request for assistance was submitted to the State health officer who dispatched three sanitarians to the Douglas County Health Department for as long as they were needed.

The State department of agriculture and the Federal Food and Drug Administration were also asked to assign personnel. Three men were made available to Douglas County from these agencies. The Lane County Health Department also assigned one sanitarian.

A total of nine sanitarians, working in teams of two or three, made detailed inspections of 40 restaurants, 13 wholesale and retail grocery outlets, 3 bakeries, 5 drug stores, and several establishments which carry other perishable foods. Multiple inspections were required of each establishment before being allowed to reopen. Businesses that were completely destroyed or severely damaged and out of business were not inspected. All operators were re-

quired to meet minimum sanitary standards and to obtain and post a certificate authorizing them to reopen for business. Food service establishments that could not meet dishwashing standards were allowed to use paper plates.

Furniture and Bedding

The Oregon State Board of Health licenses furniture and bedding manufacturers and dealers. The law and regulations apply to upholstered furniture and all types of bedding which have a concealed filling, such as sleeping bags and pillows. They do not pertain to such items as clothing, carpeting, and shoes.

One Oregon State Board of Health sanitarian and an assistant inspected 20 retail furniture and bedding outlets. A total of 478 items from 12 stores were condemned and ordered destroyed. The salvage of wood frames and spring assemblies was allowed. All articles were condemned because they were impregnated with glass fragments. The condemned merchandise was ultimately collected and destroyed under supervision of the county health department.

An example of the difficulty in salvaging soft goods impregnated by glass was demonstrated in a shoe store. The plate glass windows in the front of the store had been shattered and the carpet covering the floors was heavily impregnated with shards. The operator had repeatedly thoroughly vacuumed the carpet until no more glass was in evidence. As an added precaution, he laid loose strips of new carpeting in front of the fitting chairs. On the first day he opened for business after the explosion, a woman in her bare feet stepped off the strip onto the original carpeting. A glass fragment cut her foot. Subsequently the strips were lifted and tiny glass shards were visible on the subcarpet.

A number of glass-impregnated sleeping bags were taken to the city dump for disposal by the county sanitarians. A group of scavengers at the dump became incensed when they saw the bags were being burned. Tempers flared up concurrently with the merchandise. It was inconceivable, they thought, that apparently good sleeping bags would be so destroyed.

A meeting was arranged between the Douglas County health officer, the Oregon State Board

of Health sanitarians, and representatives from insurance companies to discuss the law and to assure that claims for loss suffered by merchants would be recognized by insurance companies when orders for destruction of goods were issued by the public health authorities.

The insurance representatives agreed with the reasons for action and expressed appreciation and concern for the public health needs that were being met. They were informed that they could request reinspection of any article they felt had been unjustly condemned. Two forms were developed to facilitate the final disposition of goods.

A large quantity of clothing, shoes, and other such goods was inventoried and allowed to be shipped to salvage companies by various merchants through agreement between the individual businesses, their insurance adjusters, and public health authorities. Copies of the inventories were furnished the State board of health for followup with the respective salvage companies.

Building Inspection

Building inspection is the responsibility of the Roseburg Public Works Department, and one building inspector performs this service.

Five hours after the explosion the city manager temporarily prohibited entry to all buildings in the disaster area until adequate safety inspections had been made. The legality for this action was not questioned. Building owners, tenants, and the general public cooperated 100 percent in this police action.

On the day of the explosion and the following day 16 persons qualified to do building or related inspections voluntarily offered their assistance.

On August 8 the disaster region was divided into small areas and building inspection teams were assigned. As more inspectors arrived, the areas were made smaller and additional teams assigned. On August 10, 26 more inspectors reported to the city as a result of a request submitted to the governor.

The first objective was to make an original inspection and determine what repairs, if any, were needed before owners, tenants, or employees would be permitted to enter the buildings. A form for a temporary structural inspection was prepared and posted in the

building subsequent to each inspection. If needed repairs were minor, the owner was allowed to enter and correct those items needing immediate attention. For major corrections, the owner's qualified contractor was asked to get a permit to enter. Proper safety equipment was required to work in buildings, and hard hats were required for everyone entering the disaster area. These were obtained and made available to those who needed them.

At the time of the first inspection a letter was given to owners, operators, and tenants explaining the purpose of the inspection and the procedure for obtaining a certificate to allow public occupancy of the building. A second form, "Report of Emergency Building Inspection After Blast and Fire," was completed during the first inspection and filed at city hall. The third form, "Public Occupancy Inspection Report," was sought after by business establishments because this permitted them to open for business when the area was opened to the public. In some instances only a portion of the building was approved, and this was so indicated on the form.

A total of 960 inspections were conducted, with 285 business buildings and 195 residences inspected an average of two times each.

On August 15 the downtown area was opened to public passage. Only foot traffic was allowed because some premises were not ready for occupancy, and damaged sidewalks forced people to walk in the street in many areas. Rope barriers were used to guide traffic.

During the entire disaster period every effort was made to coordinate the work of various agencies and organizations. A meeting, facetiously referred to as "the high command meeting," was scheduled each day at 4:00 p.m. Representatives of all departments and agencies attended to report progress and discuss problems, and through the meetings became familiar with the functions of other departments, a process which facilitated the proper referral of inquiries. Everyone concerned agreed the daily meetings were instrumental in reopening the business district in a relatively short time.

Miscellaneous Problems

Two flour and feed mills in the area were completely devastated by blast and fire. Large

quantities of soaked grain and grain products became a breeding place for flies. These locations were sprayed heavily with a residual insecticide.

The possibility of these areas becoming infested with rats was also considered. When rats appeared a month later, the services of a private exterminator were obtained through the cooperative efforts of the county health department and the city of Roseburg.

Large quantities of glass and other debris were disposed in an unused sewage treatment plant. The health department requested that this area be fenced as a safety precaution, and the city complied with this request.

Medical Emergency

The Roseburg disaster claimed 13 lives; 12 deaths were instantaneous or within about a week and 1 occurred later as a result of injuries. One person sustained severe permanent brain damage. Fifty-seven persons were treated for injuries at the three hospitals, and an undetermined number received first aid at Red Cross emergency clinics. Mercy Hospital sustained minor damage from the blast, and a few of the injured were hospital patients or staff. While the facilities of the veterans hospital were available to the community during the disaster, only three injured persons were treated there. Douglas Community Hospital, like Mercy, a general community hospital, became the main medical facility for the disaster victims.

Thirty-nine patients were treated at Community, starting at 1:45 a.m. Sixteen of these had been admitted by 4 a.m. The others were treated and immediately released. At about 2:15 a.m., the triage system was instituted. Only 30 percent of the beds were occupied, and at 1:50 a.m. these patients were moved into one section, so that all treatment facilities could be utilized for the emergency.

At Mercy Hospital, 15 patients were treated for minor injuries, beginning at about 1:20 a.m. Five of these persons were admitted. No other injured were admitted because of the damage to the hospital. Twenty of Roseburg's 31 physicians reported to Community, and worked approximately 120 man-hours giving the immediate treatment required by the injured. The

first physician reported at 1:50 a.m., the last at 2:30 a.m.

Nine of those treated at Douglas Community Hospital required emergency lifesaving measures. Lacerations and bruises were the most common type of injury; however, there were several fractures and one person suffered severe burns. Five persons were treated for punctured eardrums.

Around 2 a.m., the Red Cross set up emergency first-aid stations at the armory and the fairgrounds, but few of the injured were treated at these facilities. Two or three physicians and dentists and seven or eight nurses from the veterans hospital worked at the armory.

Food and shelter facilities were also offered at the armory. Food service was expanded to feed disaster workers and remained in operation through most of the following week.

The Douglas County health officer visited these first-aid stations within a few hours after they were set up to assure that they were adequately staffed. At the armory he examined 8 or 10 persons who had sustained minor lacerations, primarily from flying glass. A combination portable generator and floodlight operated by the National Guard provided illumination in the armory because electric service was not functioning after the disaster.

More than 50 persons responded to a call for blood, and 27 pints were drawn before immediate needs were met. The names and addresses of all donors were recorded, and they were asked to remain on call. Several pints of blood were obtained from the local blood bank and additional blood was flown from Grants Pass, Oreg., but it was not needed.

One public health nurse assumed duty as Red Cross and civil defense coordinator for nurses. She was successful in recruiting sufficient nurses to cover all shifts in the hospitals and emergency clinics. Many nurses reported during the early hours of the disaster. When enough nurses were on duty to staff the clinics and hospitals adequately, others were asked to report on later shifts.

After all the injured were treated, it was discovered that some records did not include adequate addresses because dwelling units had been destroyed. The local health department staff attempted to follow up all who had received

treatment, but they were unable to reach everyone. A request for treated persons to report was made through the press and radio. Of the 57 injured, 34 were located and records were completed. A number of the injured were out-of-town guests in the local hotels who left Roseburg shortly after receiving treatment.

Between 2 and 6 a.m., August 7, the Douglas County health officer visited each of the hospitals and first-aid stations to determine their needs and estimate what problems might develop. He found that all facilities were adequately staffed and the number of injured was less than he had anticipated.

The next day the health officer conferred with the county coroner to determine that positive identification of the dead was made before disposition of the bodies. It was necessary in some instances to make identifications through dental work. Three badly burned bodies were identified with the help of the Oregon Crime Laboratory, located at the University of Oregon Medical School.

Several physicians' offices and pharmacies were located inside the blockaded area. The city overlooked giving priority to restoring access to these facilities. Patients were not allowed passes to enter the blockaded area. When this came to the health officer's attention, he served as liaison between the physicians and city officials in securing passes for patients.

There were no cases of illness or personal injury reported during or following the emergency that were attributed to the lack of proper control of public health hazards arising from the explosion. This is not to imply that no such illness or injury occurred, but certainly cases were so few that they were unreported, and no epidemics of any nature developed.

Recommendations

In any disaster situation, it is possible to point out what could have been handled differently and possibly better. This is as true of the Roseburg disaster as any other. Most of the recommendations listed here are subscribed to by civil defense agencies. The Roseburg disaster serves again to emphasize a community's need for an active disaster preparedness organization with adequate mobile support.

1. Have trained sanitarian aides available. They would have been very useful, especially the first 3 days following the Roseburg disaster, to control the disposition of contaminated and adulterated food.

2. Organize all types of health, medical, safety, and police personnel to provide mutual aid and mobile support similar to that already in practice for fire departments. Such an arrangement would help assure any community of adequate trained personnel to cope with a disaster situation.

3. Outline clearly in each department or agency a chain of command in depth. This need was demonstrated in the Roseburg fire department. The fire chief was incapacitated by a heart attack and the assistant chief was killed by the blast. Next in command had not been established and valuable time was lost before the responsibility for directing the firefighting operation had been fixed. A similar situation could arise in any organization at any time.

4. Maintain pertinent records on patients receiving emergency treatment. Lack of addresses for patients in transit or displaced persons made followup of some persons difficult or impossible. Plans should be devised to facilitate followup.

5. Give a high priority to the restoration of hospitals, clinics, physicians' offices, and pharmacies. The pass system, if utilized, should permit patients to visit these facilities when approved for public occupancy.

Summary

The Roseburg disaster resulted when a truck laden with 6½ tons of highly explosive material was detonated by fire within three blocks of city center at 1:15 a.m., August 7, 1959.

The blast and fire virtually leveled 8 square blocks, caused structural damage in a 25-block area, and lesser damage in a 75-block area. Thirteen people were killed and 57 treated for injuries. Property damage exceeded \$12 million.

The health and medical emergency aspects of the disaster were comparatively minor considering the damage which occurred. Health and medical problems might have been much

greater had the fire and blast occurred at another time.

All windows in the business area were blown out. Glass fragments were driven with a force that caused them to penetrate food, clothing, upholstered furniture, bedding, and other articles. The Douglas County Health Department, with assistance from the State board of health and other agencies, maintained rigid control to assure that spoiled or adulterated food and otherwise damaged merchandise were not offered for sale.

Through a concerted and coordinated effort of city, county, State, and Federal agencies in cooperation with businessmen and the general public of Roseburg, vital services were restored and most businesses allowed to reopen within a reasonable period of time.

Roseburg's two general hospitals and one veterans hospital treated the injured. One hospital in Eugene, Oreg., was alerted but was not needed for the emergency. One general hospital, where the triage system was instituted 1 hour after the explosion, became the main emergency treatment facility for 39 patients. Approximately 120 hours of physician time were required for emergency treatment.

The county health department crossed many jurisdictional lines to fulfill its function of protecting the health of the public. The department staff worked to insure that the following essential services were provided: (a) adequate and safe water supply; (b) maintenance of sanitary sewage and refuse disposal; (c) provision of emergency first aid and medical treatment; (d) adequate nursing, medical, sanitation, and ancillary personnel; (e) emergency shelter and food; (f) proper identification and disposal of the dead; (g) control over storage, preparation, sale, and disposition of foods, drugs, and perishable products; (h) control of potentially hazardous merchandise, such as clothing, furniture, bedding, and all soft materials subject to glass damage; (i) informing the public on matters of individual health and measures to be taken for protection; and (j) liaison between the medical profession and city officials in promoting prompt restoration of medical services to the public.

Translated Readings

The following items have been culled from the CIA *Scientific Information Reports*, distributed by the Office of Technical Services, U.S. Department of Commerce. Numbers following each item refer to the issue and item, in that order. All issues are from the PB 131891 T series.

Pharmacology

Medicinal plants used in Chinese medicine are reviewed by I. I. Gerasimenko, All-Union Scientific Research Institute of Medicinal and Aromatic Plants, Moscow (49, 96).

Public Health

A report on public health in the People's Republic of China, by T'an Chih and Yen Yueh, Moscow, claims that cholera, plague, smallpox, and kala-azar have been "mainly eliminated." A drive to control malaria continues. The number of beds in hospitals and sanatoriums, 570,000, is said to be nine times the number in 1947. In training are 90,000 medical specialists and 159,000 students in the secondary medical schools (49, 102).

Q Fever Study

Serologic tests of 1,466 cattle, 39 sheep and goats, and 20 swine from 15 locations, by V. V. Krasnoshchekova and K. A. Shitov, Voronezhskaya Scientific Research Veterinary Station, found that positive reactions in animals did not always correspond with presence and extent of distribution of Q fever reported among humans (50, 105).

Oncology

Recent publications on cancer research include a report by E. Katinas, Lithuania, on an antitumor preparation called neocyde (52, 119); a suggestion that cortisone therapy may aggravate a neoplasm, by C. C. Dimitriu and V. Beroniade, Rumania (52, 120); analysis of the metal content in malignant tissues in rabbits, by V. I. Gorodyskiy and I. V. Veselaya of Kiev, who found relatively heavy proportions of copper, zinc, and cadmium (52, 121); and a

commentary on the international aspects of cancer research by Prof. N. N. Blokhin, President of the Academy of Medical Sciences, U.S.S.R. (52, 124).

Vibration Sickness

After delineating physical symptoms arising from vibration associated with the use of electric drills, especially hand drills, V. I. Yelgazin, chair of general electrical technology, Tomsk Polytechnic Institute, recommended specific improvements in the design and construction of the instruments (50, 141).

Washing Radioactive Hands

Of six methods applied experimentally, the method recommended by L. A. Il'in for cleansing hands contaminated with phosphorus-32 and yttrium-91 consists of washing in tapwater containing 40 percent household soap, scrubbing for 4-5 minutes, and subsequent scrubbing for 3 minutes with a different brush in a jet of 2 percent HCl (50, 151).

Marine Ultrasonics

Prolonged sonic vibrations, beyond the range of the human ear, are found by F. A. Gurevich, M. S. Levinson, and G. S. Komolova, Krasnoyarsk State Medical Institute and Institute of Physics, to destroy marine organisms by inducing chemical changes in the water (51, 85).

Influenza Diagnosis

A means for rapid determination of the type of virus active in an influenza outbreak is reported by the Ivanovskiy Institute of Virology. Essential to the method is the mass preparation of anti-influenza serums, for distribution to diagnostic laboratories (51, 91).

Occupational Hazard

Workers exposed to vibrations used in compacting reinforced concrete were found by P. S. Kublanova, Erisman Institute of Sanitation and Hygiene, to suffer impairment of perception of low-frequency sounds, even after limited service (51, 107).

Federal Publications

Health Manpower Source Book. Medical School Alumni. *PHS Publication No. 263, section 11; by William H. Stewart, M.D., and Maryland Y. Pennell; 319 pages.*

For each of the 78 active medical schools in the United States basic data are presented on the number of living graduates classified according to location in mid-1959, type of practice, and choice of specialty. Tables for each of the 50 States and the District of Columbia show the relationship between the medical school attended and the location of non-Federal physicians in 1959.

The information should be useful to persons and organizations concerned with the provision of medical services for specific localities.

Cataract and Glaucoma. Hope through research. *PHS Publication No. 793 (Health Information Series No. 99); 1961; 16 pages; leaflet; 15 cents, \$11.25 per 100.* Stresses importance of regular eye examination by an ophthalmologist of persons 40 years and older. Explains the difference between glaucoma and cataract, the two leading causes of blindness in the United States. Describes the tonometer test by which glaucoma can be discovered for early treatment before loss of field of vision occurs. Summarizes research efforts in both these blinding ailments.

A Suggested System of Uniform Expense Accounting for Nursing Homes and Related Facilities. *PHS Publication No. 835; 1961; 132 pages; \$1.*

Developed jointly by the Accounting Committee of the American Nursing Home Association and the Public Health Service, this manual has been designed to assist administrators of nursing homes and related facilities in recording expenses uniformly. This expenses accounting system is sufficiently flexible to be easily adapted for use by a majority of nursing homes.

A uniform chart of expense accounts and illustrations of accounting procedures and records to meet individual needs are presented.

Highlights of Research Progress in Allergy and Infectious Diseases, 1960. *PHS Publication No. 829; 1961; 71 pages; 30 cents.*

Major accomplishments in research on viral diseases, allergy-immunology and parasitic, bacterial, fungal, and rickettsial diseases are included. In addition, detailed reports are presented on subjects of special significance in the NIAID program: staphylococcal infections, cystic fibrosis, international research centers, Simian malaria in man, and the Middle America Research Unit.

The work of the NIAID scientific staff as well as grant-supported studies is described.

Organization and Staffing for Local Health Services, January 1, 1960. *PHS Publication No. 682; by Clifford H. Greve and Josephine R. Campbell; 60 pages; 40 cents.*

Data from 1,557 local health units show extent of coverage of the Nation by local health organizations; selected characteristics of organized areas, such as population size, land area, and density of population; personnel employed by official and other agencies; and the financial capacity of organized areas and their expenditures for public health.

Proceedings, 1961 Annual Conference of the Surgeon General, Public Health Service, With State and Territorial Mental Health Authorities. *PHS Publication No. 851; 1961; 48 pages.*

The actions taken at the January 1961 conference are recorded, and the following six group discussion sessions are summarized: regional planning and development; State mental health acts and financing; prevention of mental illness and promotion of mental health; community mental health centers: (a) adminis-

tration and organizational aspects and (b) program aspects and rural problems; and organizational setting for mental health programs.

A discussion summary is included on an ad hoc committee's report on planning of facilities for mental health services, as well as addresses given at the general sessions.

Water and Sewer Bond Sales in the United States. *PHS Publication No. 837; 1960; 10 pages.*

Summary tabulations of water and sewer bonds sold during 1960 are presented by month, population of the issuing authority, type of issuing authority, State, and net interest cost. Tabulations showing the weighted average net interest cost by months, population of the issuing authority, and size of the offering are included.

Data pertain to bonds sold to finance public facilities only.

Directory of State and Territorial Health Authorities. *PHS Publication No. 75; revised 1961; 105 pages; 35 cents.* Brings up to date the listing of personnel of State and Territorial health departments and other State agencies administering grant programs of the Public Health Service and the crippled children's grant program of the Children's Bureau.

This section carries announcements of new publications prepared by the Public Health Service and of selected publications prepared with Federal support.

Unless otherwise indicated, publications for which prices are quoted are for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C. Orders should be accompanied by cash, check, or money order and should fully identify the publication. Public Health Service publications which do not carry price quotations, as well as single sample copies of those for which prices are shown, can be obtained without charge from the Public Inquiries Branch, Office of Information, Public Health Service, Washington 25, D.C.

The Public Health Service does not supply publications other than its own.
